Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) ~~A biometric~~ An authentication system comprising:

a mobile storage device; and

a reader/writer for ~~reading/writing~~ performing at least one of reading information from and writing information ~~from/into~~ into said mobile storage device,

wherein said reader/writer comprises:

a biological information input device which inputs ~~biological~~ fingerprint information,

preprocessing means ~~for preprocessing the biological information input~~ which calculates coordinates and curvatures for a plurality of candidate points of the fingerprint information inputted by ~~said~~ the biological information input device, ~~and~~ calculates an average value of the coordinates for the plurality of candidate points, and determines a core position by the average value of the coordinates for the plurality of candidate points;

a transmitting ~~device~~ means for transmitting the core position generated in the preprocessing means ~~intermediate information preprocessed~~ to said mobile storage device according to a request from said mobile storage device,

wherein said mobile storage device comprises:

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a template ~~of biological information,~~which registers a plurality of coordinates of featuring points of the fingerprint and small images in vicinity of the coordinates;

a private key to be used for electronic authentication,

~~comparing means for comparing said intermediate information with said template,~~

~~requesting means for requesting another intermediate information from said reader/writer according to said comparing result, and~~calculating means for calculating an information for correcting a positional displacement based on a core position of a registered fingerprint recorded in said template and a core position of an input fingerprint that is newly inputted, by referring to said core position generated in the reader/writer;

requesting means for calculating coordinates of featuring points of the input fingerprint by calculating information for correcting the positional displacement with each of the coordinates of featuring points and requests fingerprint images in the vicinity of the coordinates of featuring points of the inputted fingerprint from the reader/writer;

judging means for judging whether the small images in the vicinity of the coordinates of the fingerprint registered in the template and the small images in the vicinity of the coordinates of featuring points of the inputted fingerprint match, and in accordance with a plurality of results of the matching, judges whether the fingerprint registered in the template and the input fingerprint are identical; and

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means for making ~~said~~ the private key available when ~~said comparing result~~
~~satisfies a predetermined criterion~~ the result of judging fingerprints are identical.

2.- 4. (canceled)

5. (currently amended) ~~A biometric~~ An authentication system according to ~~claim 2~~ claim 1, wherein said ~~comparing means in said mobile storage device~~ ~~includes~~ reader/writer further comprises:

calculating means for calculating information for correcting a positional displacement between a registered fingerprint in said template and an input fingerprint that is newly input by forming images having specific luminance distributions in the peripheries of individual featuring points with regard to the input fingerprint and the registered fingerprint, and by correlating said images therebetween,

retrieving means for retrieving a small image in the vicinity of a featuring point of said registered fingerprint ~~is matching~~ by matching in the vicinity of coordinates ~~of~~ ~~an~~ for an image of said inputted fingerprint, ~~that~~ wherein the positional displacement of the coordinates ~~having~~ has been corrected, and

judging means for judging whether or not said fingerprint image ~~being~~ is identical to said template according to the number of matched said small images.

6. (new) An authentication system according to Claim 1,

wherein the calculation means for calculating an information for correcting a positional displacement based on a core position calculates other candidate points of the fingerprint information by calculating a coordinate of the candidate point of an initial position and a normal vector of ridge at the initial position of the candidate point.

7. (new) An authentication system according to Claim 1,

wherein the preprocessing means invalidates the candidate points having no more than a threshold value of curvature, and determines the core position by averaging the coordinates for the candidate points left over.

8. (new) An authentication system according to Claim 1,

wherein the judging means judges identity of the fingerprint registered in the template and the input fingerprint, when a number of the match is no less than a threshold value.

9. (new) An authentication system according to Claim 1,

wherein the private key is used for authentication of applications in a computer being connected to the reader/writer.

10. (new) A mobile storage device for authentication utilizing biometric information, the mobile storage device performing at least one of transferring read information to and receiving write information from a reader/writer,

wherein the reader/writer comprises:

a biological information input device which inputs fingerprint information;

preprocessing means which calculates coordinates and curvatures for a plurality of candidate points of the fingerprint information inputted by the biological information input device, calculates an average value of the coordinates for the plurality of candidate points, and determines a core position by the average value of the coordinates for the plurality of candidate points; and

transmitting means for transmitting the core position generated in the preprocessing means to said mobile storage device according to a request from said mobile storage device,

wherein said mobile storage device comprises:

a template which registers a plurality of coordinates of featuring points of the fingerprint and small images in vicinity of the coordinates;

a private key to be used for electronic authentication;

calculating means for calculating an information for correcting a positional displacement based on a core position of a registered fingerprint recorded in said template and a core position of an input fingerprint that is newly inputted, by referring to each said core positions in the reader/writer;

requesting means for calculating coordinates of featuring points of the input fingerprint by calculating information for correcting the positional displacement with each of the coordinates of featuring points, and requests fingerprint images in the vicinity of the coordinates of featuring points of the inputted fingerprint to the reader/writer;

judging means for judging whether the small images in vicinity of the coordinates of the fingerprint registered in the template and the small images in the vicinity of the coordinates of featuring points of the inputted fingerprint match, and in accordance with a plurality of results of the matching, judges whether the fingerprint registered in the template and the input fingerprint are identical; and

means for making the private key available when the result of judging fingerprints are identical.